CLAIMS

1. Static mixer, with or without reaction, provided with
    a set of basic cells, **characterized in that** these
    cells are individually composed of an individualised
    chamber (1), provided with at least two connecting
    channels (2) connected to the chamber, at least two
    of these channels being oblique relatively to the
    resulting direction (x) of the flow within the mixer,
    and with at least two additional apertures (0)
    connecting the interior of the chamber and the
    exterior of the respective cell – for connection to
    external channels –, and **in that** said basic cells are
    sequentially interconnected between themselves in a
    two or three-dimensional space.

2. Network mixer according to claim 1, **characterized in
    that** the basic cells that constitute the mixer,
    successively interconnected between themselves, all
    or some of them, present different linear and/or
    angular dimensions of its characteristic elements (0,
    1, 2).

3. Network mixer according to either claim 1 or claim 2,
    characterized in that each basic cell is composed of
    one spherical chamber (1), two or three cylindrical
    channels (2) and two or three apertures (0) for
    connection to external channels.

4. Network mixer according to either claim 1 or claim 2,
    characterized in that each basic cell is composed of
    one cylindrical chamber (1) with axis normal to the
    mixer's plane, two or three rectangular prismatic
    channels extending throughout the whole height of the
    cylindrical surface and according to the mixer's

plane, and two or three apertures (0) in the referred
surface, for connection to external channels.

5. Network mixer according to either claim 1 or claim 2,
    characterized in that comprises simultaneously basic
    cells as described in claims 3 and 4.

6. Network mixer according to any of claims 1 to 5,
    characterized in that in each basic cell, the feed
    streams injection to the respective individualised
    chamber (1) is accomplished by channels whose axis
    are coincident with the axis of the channels
    associated with the respective chamber through which
    channels is promoted the ejection of the resulting
    mixture streams.

7. Network mixer according to any of claims 1 to 5,
    characterized in that in some cells the feed streams
    injection to the respective individualised chamber
    (1), or alternatively the mixture streams ejection
    from the chamber, is accomplished by cylindrical
    channels whose axis is normal to the plane xy and
    contains the centre of the chamber.

8. Network mixer according to claim 6, **characterized in
    that** in some cells the feed streams injection to the
    respective individualised chamber (1), or
    alternatively the mixture streams ejection from the
    chamber, is accomplished by a combined way with the
    one specified in claim 7.

9. Mixing process for chemical species in a continuous
    flow, **characterized in that** two or more of these
    species pass through the network mixer according to
    claim 1, where the injection from the mixer's

exterior is either done simultaneously for all species from the start of the mixer, or only for the two first species, the other species being progressively injected from the exterior in predetermined mixing points of the mixer, and where the ejection to the mixer's exterior is done either at the end of the mixer, in relation to the resulting mixture, or simultaneously in predetermined mixing points of the mixer, relatively to intermediate mixtures.

10. Process according to the previous claim **characterized in that** the eventual intermediate injections and ejections take place in the mixer in cells according to claim 6 or 8 and initial injections or final ejections take place in cells according to claim 6 or 7.